

## ABSTRACT

A device for the thermal decomposition of a volatile compound, and for deposition of particles which are formed by the decomposition, includes (a) a pressure vessel, (b) at least one reaction tube located inside the pressure vessel such that, an open end of the reaction tube extends into the pressure vessel and an other end of the reaction tube is located outside the pressure vessel and is provided with a gas feed, wherein a longitudinal axis of the reaction tube is oriented in the direction of gravity and parallel to a longitudinal axis of the pressure vessel, and wherein the reaction tube can be heated on a gas inlet side and cooled on a gas outlet side, wherein the pressure vessel, in its lower part, comprises a collection cone, wherein the open end of the at least one reaction tube extends into a gas space of the collection cone, wherein the collection cone is connected to an outlet lock for particles, and (c) a gas outlet unit located mainly inside the pressure vessel, the gas outlet unit comprising a gas guide, a gas inlet region, wherein the gas inlet region is in communication with the gas space of the collection cone, a filter system, and a gas outlet, which is located outside the pressure vessel.